



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D5574-1
Job Sheet 171648

Accounting Job RD17-1046-01



Part No: D5574-1

Job Qty: 3 ea

Part Name: Blade Housing, Cable Cutter



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/6/18

Job Tracking No:

Due Date: 2/16/18

Created By: Marie Lajeunesse

Type: R+D

Description:

Note: TBD Dwg D5574-1 Rev.A IPP Rev.A New issue 18/02/01 JFS Verified by:DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	3 Ea		2/15/18	0.00	0.00	Start Up Machining-1		MM
110	CNC Vertical Machining	3 pcs		2/15/18	0.00	3.54	HAAS1-1		MM
120	QC	3 pcs		2/15/18	0.00	0.00	QC2 Machining-1		MM / J.C.-L.
130	QC	3 pcs		2/15/18	0.00	0.00	QC8 Machining-1		MM 18/03/07
135	Outsource	3 pcs		2/15/18	0.00	0.30	Outsource4		At 18/04/10
140	Packaging	3 pcs		2/15/18	0.00	0.00	Packaging2		APR 04/10
150	QC	3 pcs		2/16/18	0.00	0.00	QC6		11 APR 12 2018
180	Packaging	3 pcs		2/16/18	0.00	0.00	Packaging3-1	CKL 133	APR 17 2018
190	QC21-SA	3 Ea		2/16/18	0.00	0.00	QC21		APR 17 2018

Part Op 90 - Cut blank at 7.250"

Descriptions: 110 - 1-Machine per folio FB764 DWG REV: A FOLIO REV: AA 2- deburr and break all sharp edges

120 - QC2- Inspect parts off machine FAI/FAIB

130 - QC8- Inspect parts - second check

135 - Issue P/O to ATG: PO 039246 Black Anodize & Prime as per Dwg. D5574 Certification of Conformity is required.

140 - Certification of Conformity is required.

180 - Identify as per dwg & Stock Location: _____

190 - QC21- Final Inspection - Work Order Release

MAR 08 2018

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M7075T6S1.000X5.000	7075-T6 Sheet1" Thick Plate X 5" Wide	1.8150 ft (.605 ea)	90-Start up Operation	M138451

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	M7075T6S1.000X5.000	2	24	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION		AGAINST DEPARTMENT/PROCESS			
	Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	
	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐		
	Use-as-is ☐	Thermoforming ☐	Finishing ☐			
	Suspected Unapproved ☐					

Date : _____ Step #: _____

Description Work Order Deviation

Date: 04/10/18

DART AEROSPACE LTD.
 1270 Aberdeen Street
 Hawkesbury, ON K6A 1K7
 CANADA
 TEL: 1 613 632-5200
 Email: sales@dartaero.com
 www.dartaerospace.com

DART AEROSPACE

Container No: S048130

Part: D5574-1

Job No: 171648

Serial No/Batch: S048130

Revision: A

Inspector:

Root Cause			Pressure/Forced			Broken/Damage/Defect			Grain			Outside Dimensions		
Environment ☐	No Re-verification ☐		Bending ☐			Inspection Incomplete/Unqualified ☐			Weld ☐			Over/Under tolerance ☐		
Design ☐	Operator ☐		Centre Not Concentric ☐			Contamination ☐			Wrong Stock Pulled ☐			Part Incorrect ☐		
Doc/Data ☐	Offset/Setup ☐		Cracks ☐			Countersink ☐			Out of Sequence ☐			Part Lost/Missing ☐		
Equip/Tooling ☐	Supplier ☐		Crimp/Kink/Ripple/Wave ☐			Cut Too Short ☐			Off-set ☐			Part Moved ☐		
Handling/Pre ☐	Training ☐		Cuffs ☐			Instructions Incomplete/Unclear ☐			Mislabeled ☐			Drawing ☐		
Material ☐	Use for Testing ☐		Crushing ☐			Drill Holes ☐			Fit/Function ☐			Finish ☐		
Internal Transport ☐	Poor Information ☐		Heat Treat ☐						Misaligned/off center ☐			Misread ☐		
Tribal Knowledge ☐	Rushing ☐		Wave/Twist in Tube ☐									Turning Sequence ☐		
LOA ☐	Product Improvement ☐		Marks/Chatter ☐											
Substation ☐	Process Improvement ☐													
Past Expiry Date ☐	Manufacturing Process ☐													
Misidentified ☐	Past Due ☐		OTHER : _____											

DQA: _____ Date: _____

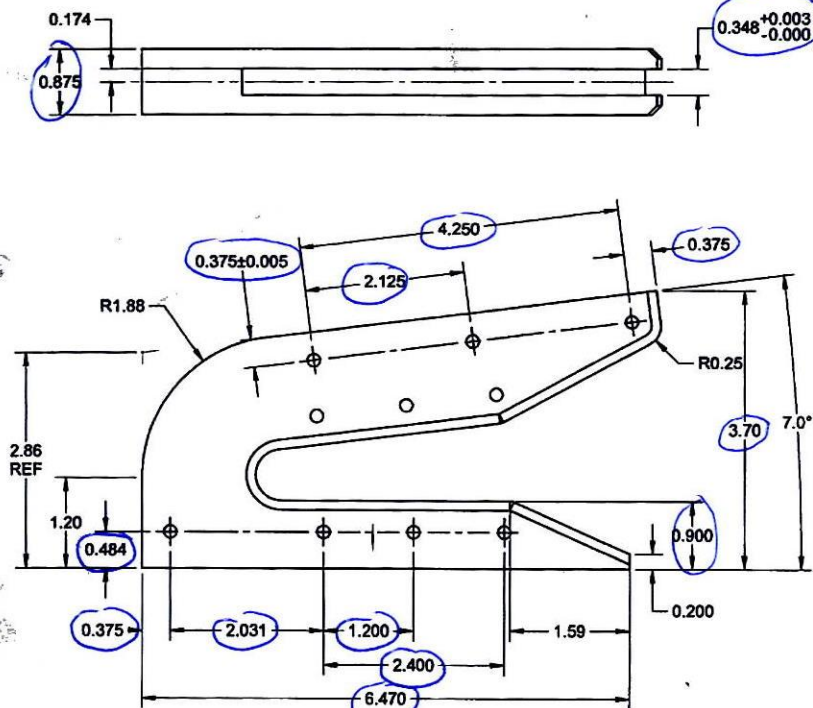
WORK ORDER NON-CONFORMANCE / UPDATE



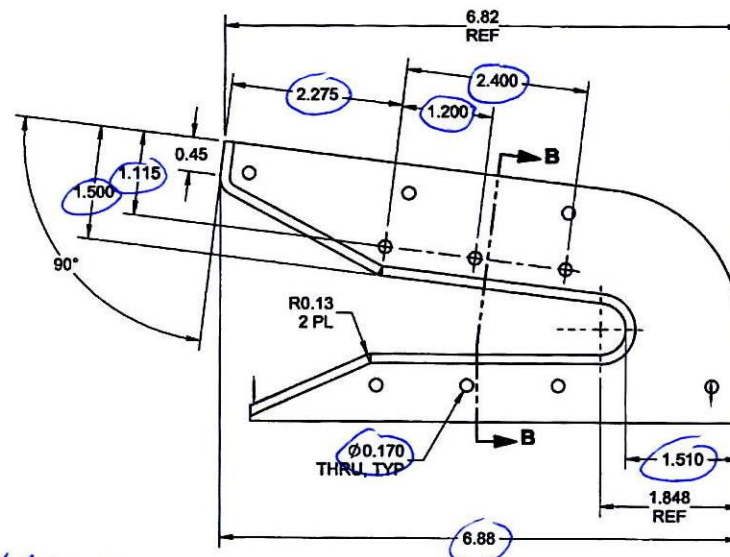
QA Closed: _____ Date: _____

Work Order update only ☐

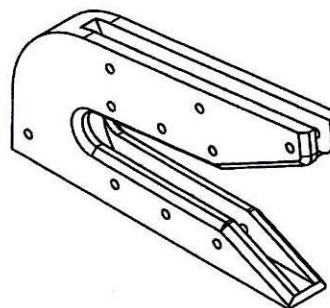
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation				Disposition			
				Completed By			
				Lead hand / Supervisor Approval Verification			
				QC / QA Coordinator Approval			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : _____							



D5574-1 BLADE HOUSING, CABLE CUTTER



Job # 171648



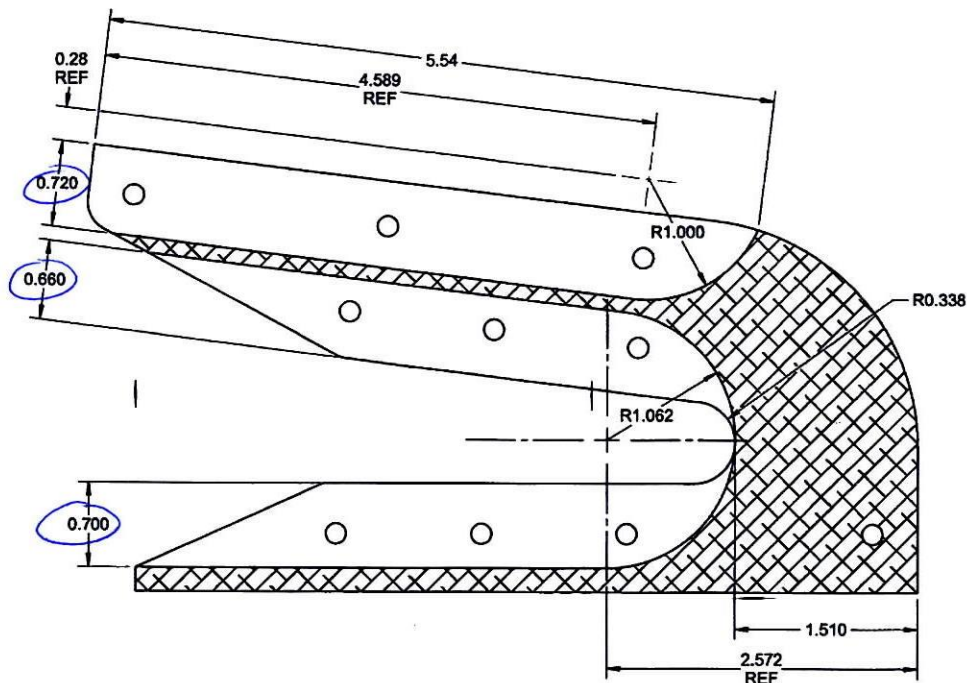
NOTES:

- 1) MATERIAL: 7075-T6 (OR T651/T6510/T6511/T652) ALUMINUM BAR
PER AMS-QQ-A-225/9 (OR AMS 4122/4123/4186/4187) OR
PER AMS-QQ-A-200/11
REF DART SPEC M7075T6B
OR: 7075-T6 (OR T62/T651) ALUMINUM PLATE
PER AMS 4045 OR ASTM B209
REF DART SPEC M7075T6S
- 2) FINISH: ANODIZE PER MIL-A-8625, TYPE II, CLASS 2, COLOR = BLACK
PRIME USING MIL-PRF-23377, 1-2 MIL MAX, PER DART QSI 005 4.2.1.3.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.98 lbs

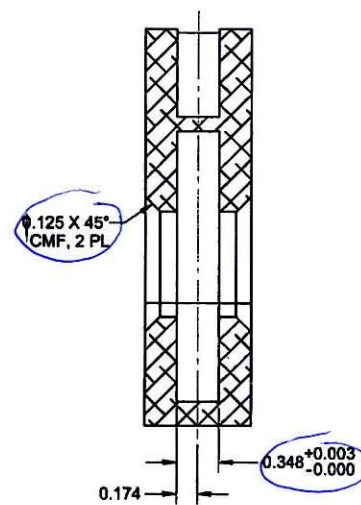
RELEASED

2018 FEB 28
Eugene, OR

A		NEW ISSUE		CP	17.11.17
REV.	DESCRIPTION			BY	DATE
DESIGN	AJS	DART AEROSPACE USA, INC.			REV. A
DRAWN	CP	EUGENE, OR			SHEET 1 OF 2
CHECKED	RF	DRAWING NO. D5574			SCALE
MFG. APPR.	JFS	TITLE BLADE HOUSING, CABLE CUTTER			NTS
APPROVED	HS	DATE 17.11.17			
DE APPR.	CP	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC.			
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SECTION A-A
SCALE 1.25X



SECTION B-B

RELEASED

2018 FEB 28

APPROVED	DESIGN	AJS	DART AEROSPACE USA, INC.	
	DRAWN	CP	EUGENE, OR	
	CHECKED	RF	DRAWING NO.	REV. A
	MFG. APPR.	JFS	D5574	SHEET 2 OF 2
	APPROVED	HS	TITLE	SCALE
	DE APPR.	CP	BLADE HOUSING, CABLE CUTTER	NTS
DATE	17.11.17	COPYRIGHT © 2017 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		

(1015)

-524
 -621
 -5205
 -622
 -523
 -258
 -6245
 -264
 -2635
 174
 M45 = 267



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO039246

Supplier: ATG001-VC
A.T.G. Industries Inc
731 INDUSTRIELLE ROAD
ROCKLAND
ON
K4K 1T2 Canada
Phone: 613-446-4544
Fax: 613-446-4556

Attention: Lalande, Marc-Andre

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: PO039246

PO Date: 3/8/18

Due Date: 3/16/18

**Purchase Order
Revision:**

Revision Date: 3/20/18

Ship-To Contact: Baker, Diane
Phone: dbaker@dartaero.com

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
MAR 20 2018

Items										
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	171648	D5574-1	Blade Housing, Cable Cutter Issue P/O to ATG : Black Anodize & Prime as per Dwg. D5574 Certification of Conformity is required.	Firmed	4/2/18	3 pcs	0 pcs	3 pcs	\$11.87/pcs	\$35.61
							3x		AT 18/04/10	
2	172352	D5575-3	Break Away Tip, Lower Deflector Issue P/O to ATG : Black Anodize & Prime as per Dwg. D5575-3 Certification of Conformity is required.	Firmed	4/2/18	2 pcs	0 pcs	2 pcs	\$10.12/pcs	\$20.24
							2x		AT 18/04/10	
3	170170	647.7810	Bracket A Issue P/O to ATG : Hard Black Anodize and Prime as per Dwg 647.7800 Rev. A	Firmed	4/2/18	4 pcs	0 pcs	4 pcs	\$16.12/pcs	\$64.48
							x 4			
4	170171	647.7811	Bracket B Issue P/O to ATG : Hard Black Anodize and Prime as per Dwg 647.7800 Rev. A	Firmed	4/2/18	4 pcs	0 pcs	4 pcs	\$16.12/pcs	\$64.48
							x 4			
5	169393-A	647.7912	Clip ISSUE P/O: Hard Anodize, Color Black and Prime As Per Dwg. 647.7900	Firmed	4/2/18	12 pcs	0 pcs	12 pcs	\$11.22/pcs	\$134.64

DAS
11
9-89



A.T.G. Industries Inc.
731 Industrielle Street
Rockland, ON K4K 1T2
Canada

Ph: (613) 446-4544

Fax: (613) 446-4556

Pack List

Number: 914895

Date: 06-Apr-18

To

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ship To

Diane Baker
Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury, ON K6A 1K7

Ph: 613 632-9577

Fax: 613 632-1053

Ph: 613 632-9577

Fax: 613 632-1053

Terms		Ship Via	
		OUR TRUCK	
Quantity	Description		
	Please reference this document's Pack List number on all correspondences regarding this shipment. If you have any questions, please contact us.		
3 ea	Part: D5574-1 Blade Housing, Cable Cutter Anodize per MIL-A-8625F, Type II, Class 2, Black, .0004-.0010" (.4 - 1 mils). Job: 22687	Rev: A	PO: PO039246 Line: 1
2 ea	Part: D5575-3 Break Away Tip/Lower Deflector Job: 22688	Rev: A	PO: PO039246 Line: 2
CERTIFICATE OF CONFORMANCE A.T.G Industries Inc. certifies that all items in this shipment conform to the requirements. Date: <u>6/4/18</u> Certified Signature: <u>[Signature]</u> Receiver Signature: _____ A.T.G Industries Inc. is AS9100 Registered and Nadcap Chemical Processing Accredited. Note: This Packing Slip may contain parts that have been PLATED. Items that are plated may be subject to natural tarnishing and it is suggested that they be inspected within 24 hours of receipt.			
Made in Canada.			

Purchase Order Receipt Listing

Page 1 of 1

Thursday, September 07, 2017 11:46:00 AM

All amounts are calculated in domestic currency.

All Vendors PO ID PO37473 All Receipt Dates All Line Item Types

All Item ID/GL/WOs All Rec. Employees All Currencies

Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID\Vendor Name			VU-MET002 A.M. Castle & Co. (Canada) Inc.- C/O 910720								
PO37473	4		M7075T6S1.000X5.0 sf 00		9/8/2017	9/7/2017	48.0000		0.0000	0	\$0.00
USD	No		7075-T6 Sheet1" f Thick Plate x 5" Wide m138451		48.0000	PLOU01			0.0000	0	
	6		71401-45		9/8/2017	9/7/2017	1.0000		0.0000	0	\$0.00
	No		PROCUREMENT QUALITY CLAUSES m138451		1.0000	PLOU01			0.0000	0	
Total Received Quantity:											49.0000
Total Qty to Inspect (PO U/M):											0.0000
Total Reject Quantity:											0.0000
Total Receipt Value:											\$0.00
Total Balance Due Quantity:											0.0000

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:3376415

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 06-SEP-17	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3376415-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No 4863154	Line No 3	Item No 752188.MO	Description 1.0000.PL.7075.T651.ALUMINUM.US1.48.5000.144.5000 CUT 2SIDED TO 5 IN (+ .1250/- .0000 IN) X 144.5 IN (+ .1250/- .0000 IN) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12
----------------------------	---------------------	-----------------------------	--

Purchase Order No 37473	Part Number	Ordered Qty 4.00 PCS	Invoice Qty 4.00 PCS
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Details	ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS
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Delivery No. 121282766	Mill/Source CONSTELLIUM ROLLED PRODUCTS	Heat Number 	Mech Id	PCS 4	Width (IN)	Length (IN)	Shipped Qty(LBS) 300.9393
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We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative: **SHIPPED SEP 06 2017** Date: Name: *Ch. Rander*



Date Printed: 06-SEP-2017 02:48:40 PM



Constellium



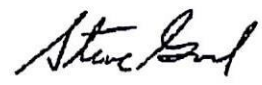
CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

S
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P
T
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A M CASTLE CO
3050 SO HYDRAULIC
WICHITA KS
67216
US

S
O
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D
T
O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110539772		4075		INCLUSION		Serial:20170527-0110539772		Pg 1of4	
CUSTOMER PURCHASE ORDER NO. & ITEM 419757						Constellium ORDER NO. 203735					
ALLOY 7075	CLAD	TEMPER T651	GUAGE 1.0000 in 25.40 mm	WIDTH 48.5000 in 1,232 mm	LENGTH 144.5000 in 3,670 mm	CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Steve Good - Laboratory Manager					
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188			B/L NUMBER 81388		DATE SHIPPED 05/29/2017						
WT. SHIPPED 5770.000 LB		NO. OF PIECES 000008		GOVT. CONTRACT NO.							

ALL LOTS ON THIS CERTIFICATION ALSO CONFORM TO THE FOLLOWING REQUIREMENTS:

ASTM B594 REV 13 2013 100% SONIC W/ 0.125" DEADZONE Class A
 AMS QQ-A-250/12A
 AMS STD-2154A 2012 TYPE1 CLASS A 100% SONIC MINUS DEADZONE
 ASTM B209-14
 BSS-7055B 2013 CLASS A 100% SONIC TESTED MINUS DEADZONE
 CST1008 REV E 2011 CLASS A 100% SONIC MINUS DEADZONE
 DPS 4.713 REV AK 2012 CLASS A 100% SONIC MINUS DEADZONE
 GAMP5 9101 REV B 2006 CLASS A 100% SONIC MINUS DEADZONE
 PS 21211P 2010 CLASS A 100% SONIC MINUS DEADZONE

Load Details

Package	Net Lbs	Kg	Lot	Piece	Serial	Parent Lot
1001522455	725.000	328.854	9387991	01		
1001522455	725.000	328.854	9387991	02		
1001522455	725.000	328.854	9387991	03		
1001522460	725.000	328.854	9387992	01		
1001522460	725.000	328.854	9387992	02		
1001522460	725.000	328.854	9387992	03		
1001522466	710.000	322.050	9387993	01		
1001522466	710.000	322.050	9387993	02		

Lot: 9387991

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	79.8	80.5	70.1	72.3	13.0	13.0	





Constellium



CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

S
H
I
P
T
O

A M CASTLE CO
3050 SO HYDRAULIC
WICHITA KS
67216
US

S
O
L
D
T
O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110539772	4075	INCLUSION	Serial:20170527-0110539772	Pg 2of4
CUSTOMER PURCHASE ORDER NO. & ITEM 419757				Constellium ORDER NO. 203735		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA <i>Steve Good</i> Steve Good - Laboratory Manager
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm	
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH						
CUSTOMER SPECIFICATION AMS 4045K						
PART NUMBER 752188		B/L NUMBER 81388		DATE SHIPPED 05/29/2017		
WT. SHIPPED 5770.000 LB		NO. OF PIECES 000008		GOVT. CONTRACT NO.		

Tensile - Room Temperature (SI)							
		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)	
Direction	Tests	Min	Max	Min	Max	Min	Max
LT	02	550	555	483	498	13.0	13.0

Chemistry (Actual)									
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.05	0.16	1.38	0.03	2.48	0.20	5.45	0.04	0.01

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: 9387992

Tensile - Room Temperature (US)							
		Ultimate (KSI)		Yield (KSI)		Elongation (%)	
Direction	Tests	Min	Max	Min	Max	Min	Max
LT	02	80.3	80.6	71.5	72.0	12.5	13.5





Constellium



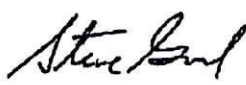
CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

S
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A M CASTLE CO
3050 SO HYDRAULIC
WICHITA KS
67216
US

S
O
L
D
T
O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110539772		4075		INCLUSION		Serial:20170527-0110539772		Pg 3of4	
CUSTOMER PURCHASE ORDER NO. & ITEM 419757						Constellium ORDER NO. 203735					
ALLOY 7075	CLAD	TEMPER T651	GAUGE 1.00000 in 25.40 mm	WIDTH 48.50000 in 1,232 mm	LENGTH 144.50000 in 3,670 mm		CERTIFICATION "Constellium Rolled Products, hereby certifies that metal shipped under this order has been inspected and found in conformance with the requirements of the applicable specifications as indicated herein. Any warranty is limited to that shown on Constellium Rolled Products' standard General Terms and Conditions of Sales. Test reports are on file, subject to examination." Constellium Rolled Products Ravenswood, LLC 859 Century Road P.O. BOX 68 RAVENSWOOD, WV 26164 USA  Steve Good - Laboratory Manager				
ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188		B/L NUMBER 81388		DATE SHIPPED 05/29/2017							
WT. SHIPPED 5770.000 LB		NO. OF PIECES 000008		GOVT. CONTRACT NO.							

Tensile - Room Temperature (SI)

		Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	554	556	493	496	12.5	13.5	

Chemistry (Actual)

	SI	FE	CU	MN	MG	CR	ZN	TI	ZR
Core	0.05	0.16	1.38	0.03	2.48	0.20	5.45	0.04	0.01

OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER

All material contained in this lot was cast and manufactured in the USA

Lot: 9387993

Tensile - Room Temperature (US)

		Ultimate (KSI)		Yield (KSI)		Elongation (%)		Report
Direction	Tests	Min	Max	Min	Max	Min	Max	
LT	02	79.9	80.8	70.4	71.6	13.0	13.5	





CERTIFIED TEST REPORT
Constellium Rolled Products
Ravenswood, LLC

S
H
I
P
T
O

A M CASTLE CO
3050 SO HYDRAULIC
WICHITA KS
67216
US

S
O
L
D
T
O

A M CASTLE
1420 KENSINGTON ROAD, SUITE 220
OAK BROOK IL
60523
US

A M CASTLE		110539772		4075		INCLUSION		Serial:20170527-0110539772		Pg 4of4	
CUSTOMER PURCHASE ORDER NO. & ITEM 419757						Constellium ORDER NO. 203735					
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ITEM ORDERED SPEC PLATE, SAWED MILL FINISH											
CUSTOMER SPECIFICATION AMS 4045K											
PART NUMBER 752188				B/L NUMBER 81388				DATE SHIPPED 05/29/2017			
WT. SHIPPED 5770.000 LB				NO. OF PIECES 000008				GOVT. CONTRACT NO.			
Steve Good - Laboratory Manager											
Tensile - Room Temperature (SI)											
				Ultimate (N/MM2)		Yield (N/MM2)		Elongation (%)		Report	
Direction	Tests	Min	Max	Min	Max	Min	Max	Min	Max		
LT	02	551	557	485	493	13.0	13.5				
Chemistry (Actual)											
	SI	FE	CU	MN	MG	CR	ZN	TI	ZR		
Core	0.05	0.16	1.38	0.03	2.48	0.20	5.45	0.04	0.01		
OTHERS-EACH: .05 MAX. OTHERS TOTAL: .15 MAX. AL REMAINDER											
All material contained in this lot was cast and manufactured in the USA											
QUALITY TEXTS: AMC CA-15403 R 8											
THIS TEST REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY OR AUTHORIZED QUALITY DELEGATE. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. CHEMISTRY BY OES: ARKSPARK CHEMISTRIES REPORTED IN PERCENTAGE BY WEIGHT WHEN FRACTURE TOUGHNESS TEST REQUIRED, TESTED PER ASTM E399 WHEN TENSILE TEST REQUIRED, TESTED PER ASTM E8; B557 DUNS Number: 090570149; CAGE Code: 1YW19 Mercury is not a normal contaminant in aluminum alloys and neither mercury nor any of its compounds were utilized in the manufacture of our product. "END OF CERTIFICATION"											



SPECIFICATION CONTROL DRAWING

1.00 X 5.00

△ PURCHASE MATERIAL: 7075-T6/T62/T651 ALUMINUM SHEET OR PLATE

SPECIFICATION: QQ-A-250/12 OR AMS-QQ-A-250/12
OR AMS 4045
OR ASTM B209

OR

△ PURCHASE MATERIAL: 7075-T6/T62/T651 ALCLAD ALUMINUM SHEET OR PLATE

△ SPECIFICATION: QQ-A-250/13 OR AMS-QQ-A-250/13
OR AMS 4048 / 4049
OR ASTM B209

△ PART NUMBER: M7075T6S | TTT | X | W.WWW |
| THK | | WIDTH |

△ WHERE "TTT" = THICKNESS (IN INCHES)
AND "W.WWW" = WIDTH (IN INCHES, OPTIONAL, FOR SPECIFYING CUT PLATE)

EG. 0.063" THICK SHEET = M7075T6S.063
EG. 3.5" WIDE BY 0.500" THICK PLATE = M7075T6S.500X3.500

△ PREFERRED SIZE: .TTT BY 4FT BY 10FT FOR SHEET

RELEASED

2017 JUN 19 4P
ECN 17-574

B	ADD- REF TO "PLATE" "T651" TEMPER, AMS 4048, OPTIONAL WIDTH DIM (CAR18-149)	CP	17.05.05
A	NEW ISSUE	RF	10.11.08
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	CP		
CHECKED	ML	DRAWING NO.	REV. B
MFG. APPR.	LL	M7075T6S	SHEET 1 OF 1
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	7075-T6 SHEET/PLATE SPEC	NTS
DATE	17.05.05	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DRAWING IS PROPERTY OF DART AEROSPACE LTD. AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.	

APPROVED

MATERIAL RECEIPT INSPECTION FORM

MATERIAL M7075 T6 S1.00X5.00 PC BATCH NO 37473/13845
 DATE 17/09/12

MATERIAL ORDER NO 48 THICKNESS ORDERED 1.00
 QUANTITY RECEIVED 48 THICKNESS RECEIVED 1.00
 QUANTITY INSPECTED 48 SHEET SIZE ORDERED _____
 QUANTITY REJECTED _____ SHEET SIZE RECEIVED _____

DESCRIPTION	NOR	COMMENTS
SURFACE DAMAGE	☒	
CORRECT FINISH	☒	
CORROSION	☒	
CORRECT GRAIN DIRECTION	☒	
CORRECT MATERIAL PER M-DRAWING	☒	AMS - QQ-A-250/12
CORRECT THICKNESS	☒	
PHOTO REQUIRED	☒	
CORRECT REF # TO LINK CERT	☒	HEAT # 9387992
CORRECT MATERIAL IDENTIFICATION	☒	M7075 T6 S1.00X5.00
CORRECT MFG ON THE MATERIAL	☒	M13845
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	☒	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY <u>ML</u>	SIGNED OFF BY _____		
DATE <u>17/09/12</u>	DATE _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO37473

Purchase Order Date 8/18/2017

PO Print Date 8/18/2017

Page Number 1 of 3

Order From :

VU-MET002

Ship To : DART AEROSPACE LTD

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W 0E9
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
8/21/2017

Contact Name

Buyer

Diane Baker

Vendor Phone

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Terms

Net 30

Ship To Phone

Currency

USD

Ship Via:

Yours ppd

FOB

Destination-Collect

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M7075T6S0.375X8.000	7075-T6S Sheet .375" Thick Plate x 8" Wide	9/8/2017 Yes 9/8/2017		12.00 f	\$30.75	\$369.00
	MAT'L 7075-T6/T62 ALUMINUM SHEET SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209						
	MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209						
						Line Total:	\$369.00
2	M7075T6S1.500X1.500	7075-T6S Sheet 1.5" Thick Plate x 1.5" Wide	9/8/2017 Yes 9/8/2017	FN	24.00 f	\$21.06	\$505.44
	MAT'L 7075-T6/T62 ALUMINUM SHEET SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209						
	MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209						

Note:

8/18/2017



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37473**

Purchase Order Date 8/18/2017

PO Print Date 8/18/2017

Page Number 2 of 3

Order From :
METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Diane Baker

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

USD

FOB

Destination-Collect

Line Total: \$505.44

3	M7075T6S1.750X2.250	7075-T6 SHEET 1.750" X 2.250"	9/8/2017	36.00	\$28.62	\$1,030.32
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Yes

f

9/8/2017

MAT'L 7075-T6/T62 ALUMINUM SHEET

SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209

MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET

SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209

Line Total: \$1,030.32

4	M7075T6S1.000X5.000	7075-T6 Sheet 1" Thick Plate x 5" Wide	9/8/2017 FN	48.00	\$21.75	\$1,044.00
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Yes

sf

9/8/2017

MAT'L 7075-T6/T62 ALUMINUM SHEET

SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209

MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET

SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209

Line Total: \$1,044.00

Note:

8/18/2017

SPR-9.7.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO37473**

Purchase Order Date 8/18/2017

PO Print Date 8/18/2017

Page Number 3 of 3

Order From :
METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via: Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Diane Baker

10127-2607

Net 30

USD

Destination-Collect

5	M7075T6S0.375X5.000	M7075T6S0.375 x 5.000	9/8/2017	36.00	\$18.10	\$651.60
			Yes	f		
			9/8/2017			

MAT'L 7075-T6/T62 ALUMINUM SHEET
SPECS QQ-A-250/12 OR AMS-QQ-A-250/12 OR AMS 4045 OR PER ASTM B209

MAT'L 7075-T6/T62 ALCLAD ALUMINUM SHEET
SPECS QQ-A-250/13 OR AMS-QQ-A-250/13 OR AMS 4049 OR PER ASTM B209

Line Total: \$651.60

6	71401-45	PROCUREMENT QUALITY CLAUSES	9/8/2017	1.00	\$0.00	\$0.00
			No			
			9/8/2017			

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

Line Total: \$0.00

PO Total: \$3,600.36

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 3

Change Date: 8/18/2017